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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/526,184

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Yoshitsugu Morita

71,051-003

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10/13/2009

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EXAMINER

WESTERBERG, NISSA M

ART UNIT

PAPER NUMBER

1618

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/526,184	<b>Applicant(s)</b> MORITA ET AL.	
	<b>Examiner</b> Nissa M. Westerberg	<b>Art Unit</b> 1618	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 7/24/09, 7/27/09.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3 - 10, 12 - 19 is/are pending in the application.
- 4a) Of the above claim(s) 6, 7, 16 - 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3 - 5, 8, 9, 12 - 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 24, 2009 has been entered. The supplemental response filed of July 27, 2009 has also been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3 – 5, 8 – 10 and 12 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dalle et al. (US 6,013,682) in view of Lochhead et al. (1993). This rejection is MAINTAINED for the reasons of record set forth in the Office Action mailed April 24, 2009 and those set forth below.

Applicant traverses this rejection on the grounds that the laureth-3 and laureth-23 present in examples of Dalle et al. are merely emulsifiers/surfactants which have no impact on the chemical structure of organosilicon polymer itself. Laureth-3 is dodecyl glycol ether while laureth-23 is also a polyethylene glycol ether of lauryl alcohol and are equivalent emulsifiers/surfactants in nearly the same percentages as the secondary tetradecyl ether and secondary dodecyl ether of ethylene oxide. A table, based on the two polysiloxane ingredients, the platinum catalyst and the two surfactants showing the

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amounts of parts by weight and weight percent of Ex 1 of Dalle et al. and Comparative example 1 is presented. The Examiners arguments in regards to the order of addition being the same in only one example are irrelevant as the hydrosilation reaction does not occur until all there components are present. The Applicants disagrees with the Examiner in regards to the relevance and/or importance of the different ratio of dimethylvinylsiloxy terminal dimethylpolysiloxane or organohydrogenpolysiloxane. The Examiner contends that this ratio will determine the ultimate structure of the organosilicone polymer but the Applicants once again point to the fact that the ratio is not a presently claimed feature. This ratio may have a slight impact with respect to the length of the polymer chain but the length of the polymer chain does not have an impact on the desirability of utilizing the polymer by itself, without component (B), which is precisely why this ratio is not claimed. Both the examples in Dalle et al. and the comparative examples use organohydrogenpolysiloxane containing 0.16% silicon-bonded hydrogen atoms. As such, the resulting structures are much more similar than the Examiner has appreciated. Applicant also disagree with the Examiner's statement that the evidence is not sufficient to establish a trend that is commensurate in scope with the instant claims. Claim 1 is not a product-by-process claim and the Examiner's focus should be on whether a particular component meets the requirements of component (A) and not the method and ratios utilized in making component (A). Applicants remind the Examiner that unexpected results can overcome a prima facie case of obviousness and there is not a bright line number of examples required.

With respect to component (B), Applicants argue that the Examiner has not fully analyzed practical examples 1 – 6, which utilize several types of oil and claim 1 has been amended to recite that component (B) comprises a non-crosslinkable silicone oil or organic oil. Several oils meeting this limitation are provided and Table 2 illustrates an improvement of more than 100% over the best coefficient of adhesion to hair obtained in the comparative examples.

These arguments are unpersuasive. The structure of the polymeric component (A) is determined by the process by which it was synthesized. For simplicity, the dimethylpolysiloxane having both ends blocked by dimethylvinylsiloxy groups will be referred to as “block 1”, while the dimethylpolysiloxane end-blocked with dimethylhydrogen siloxy group will be referred to as “block 2”. The examples in Dalle et al. have a neat synthesis of the polymeric component (A) as all three ingredients for polymerization are present, at point polymerization would be initiated, before the surfactants and water are added. The copolymerization of the vinyl groups of the dimethylpolysiloxane (block 1) with the hydrosilation group of block 2 is a process which is dependent on the amount of the monomers in the reaction and the amount of catalyst present in the reaction mixture. Example 1 of Dalle contain 29 parts block 1, 0.9 parts block 2 and 0.015 parts platinum catalyst. The only difference in examples 2 and 3 are small changes in the amount of block 2 present (1 and 1.15 parts respectively). For these three examples, the ratios of block 1: block 2 are about 32:1, 29:1 and about 25:1. The viscosity of emulsions prepared using the polymers from these three examples and the same surfactants in the same amounts are 1.12 million, 5.2 million and 75 million

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mm<sup>2</sup>/sec (col 8, ln 7 – 10) and must arise from the changes in the relative amount of block 1 to block 2 as all other ingredients are exactly the same and present in the exact same amounts. Therefore, changes in the relative amounts of the two monomers does result in polymers with different structures which effect the properties of the prepared emulsion. The percentages set forth by Applicant in Table 1, p 8 of the July 24, 2009 response should not include the amounts of the surfactant present because it was not present during the synthesis of the polymer and even if it was, Applicant has argued that the surfactants present are “irrelevant to the chemical structure of the organosilicon polymer itself” (p 7 of response).

Comparative examples 1 – 3 do not use a neat synthesis of the polymer but rather an emulsion synthesis method in which polymerization occurs in the droplets of disperse phase. In such a polymerization, the size of the droplet in the dispersed phase is a key parameter that affects the structure of polymer that is produced. So in addition the structure being affected by the differences in relative amounts of block 1 and block 2, the size of the droplets will also affect the structure of the final polymer. Also, as discussed above, changes in the ratio of block 1 to block 2 results in polymers with different structure and even before taking into account the different polymerization methods used, the comparative examples use 98 parts of block 1 to 2 parts block 2 (block 1:block 2 ratio of 49:1).

Applicants indicate that they use “equivalent” surfactants. Even if both Dalle et al. and the comparative examples used an emulsion polymer synthesis, it is possible that the droplets would have been of the same size. However, there must be evidence of

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that fact and there is no such evidence on the records. Applicants arguments cannot take the place of evidence where evidence is required.

While platinum is present as a catalyst, the amount of the catalyst plays a role in the final structure of the polymer that is produced. The neat synthesis of Dalle et al. uses 0.015 parts of a platinum catalyst while the comparative examples of the instant application use 5 ppm of Pt relative to the total weigh of the diorganosiloxane (§ [0049] of the PGPub of the instant application). The Examiner requests that Applicant demonstrate how this value translates to the 0.015 parts by weight shown in table 1 set forth on p 8 of the July 24, 2009 response.

Applicant have also failed to establish that the components used as block 1 and block by Dalle and the comparative examples are the same as Dalle reports the viscosity in  $\text{mm}^2/\text{sec}$  while the comparative examples use mPas. This, in conjunction with the different polymerization methods used and the question regarding whether or not the same about of catalyst was used, evidence that the polymers produced by these processes are the same is required. Applicants' arguments cannot take the place of evidence and the evidence currently on the record indicates that the polymers that correspond to component (A) of the instant claims produced by Dalle et al. and the comparative examples are not the same. Applicant is correct that the instant claims are not product-by-process claims, but the evidence currently on the record indicates that the different processes used result in different products, which means the comparisons made between the comparative examples to the practical examples of the instant

application are not the requisite comparisons to establish unexpected results in order to overcome the prime facie case of obviousness.

Even if those comparisons were valid, the comparisons made involve emulsions comprising a very small subset of the various component (A) encompassed by the claim; dimethylsiloxyl end-blocked dimethylpolysiloxane of varying viscosities (practical examples 1, 2, 4 and 6), isoparaffin oil (practical example 3) or decamethylcyclopentasiloxane (practical example 5) as component (B) and multiple surfactants. The presence of surfactants is not required by the claim, making any examples that might be persuasive with evidence as to the structure of the polymers produced being the same not commensurate in scope with the instant claims. Applicants have not argued or presented evidence as to how the components (A) present in these examples, which all utilize the same amounts of the same blocks in all but practical example 4, are representative of the genus of "linear organosilicone polymers whose main chain is composed of diorganosiloxane units and alkylene units" and how those polymers recited are the identical to the polymers taught in the prior art. Similarly, applicants have not argued and/or presented evidence that the trimethyl siloxyl end blocked dimethylpolysiloxane and isoparaffin are representative of the full genus of "oil that is liquid at room temperature comprising a non-crosslinkable silicone oil or an organic oil". Also not presented is evidence as to the criticality of the claimed ratio of A:B as all the examples use the same weight ratios of A:B. Applicant is correct that there is not a set number of examples that must be presented but rather that a sufficient number be presented to either encompass the full breadth of the claim or so that a trend

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for the full breadth can be ascertained from those examples which are presented.

Applicants have not been persuasive in showing that they have met that burden to demonstrate the unexpectedly improved properties of the claimed aqueous emulsions for the scope of aqueous emulsion encompassed by the instant claims.

New claims 13 – 15 have been added which recite that the emulsion has a particular average particle size. Dalle et al. discloses emulsions with mean particle sizes ranging from 0.45 micrometers – 13 micrometers, depending on the amount of water in how many stages and the surfactants used (col 8, ln 4 – 67). The emulsions described have mean particles ranging from about 0.3 or about 1 to 100 micrometers (col 6, ln 62 – 65). Dimethicone is taught by Lochhead et al. as imparting emollient, lubricant and water repellant properties to hair and skin care products and is an oil that is liquid at room temperature, does not hydrosilation reactive groups and is a non-crosslinkable silicone oil. The amount of a specific ingredient in a composition is clearly a result effective parameter that a person of ordinary skill in the art would routinely optimize. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ and reasonably would expect success. It would have been customary for an artisan of ordinary skill to determine the optimal amount of each ingredient, from the silicone polymer component (A) to the liquid oil ingredient to add in order to best achieve the desired results. Dalle et al. in view of Lochhead et al. renders obvious to one of ordinary skill in the art the aqueous emulsions of the instant claims.

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6. Claims 1, 3 – 5, 8 – 10 and 12 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dalle et al. and Lochhead as applied to claims 1, 3 – 5, 8 – 10 and 12 – 15 above, and further in view of Gee (US 4,620,878).

Dalle et al. discloses emulsions that are prepared using organosilicon polymers whose main chain is composed of diorganosiloxane units and alkylene units that are used in the preparation of aqueous emulsion of varying mean particle size, depending on the surfactants and water addition process used (col 7, ln 50 – col 8, ln 67).

Lochhead et al. discloses that dimethicone, an oil that is liquid at room temperature, does not hydrosilation reactive groups and is a non-crosslinkable silicone oil, would impart emollient, lubricant and water repellent properties to hair and skin care products (p 117, col 2).

Neither reference explicitly discloses why certain mean particle sizes are desirable in aqueous emulsions.

Gee discloses that fine emulsions of polyorganosiloxanes of less than 0.3 microns have a translucent or transparent appearance (col 1, ln 7 – 17). Such emulsions are prepared by mixing a polyorganosiloxane with at least one surfactant and rapidly dispersing the oil concentrate in water (col 2, ln 35 - 54). This is the same process used to prepare the emulsions in Dalle et al.

It would have been obvious to the person of ordinary skill in the art at the time the invention was made to vary the particle size of the dispersed phase in the emulsion. The person of ordinary skill in the art would have been motivated to make those modifications to alter the physical properties of the emulsion such as the appearance

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and reasonably would have expected success because Dalle et al. and Gee disclose emulsions with a different particle sizes that will have different final appearances.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nissa M. Westerberg whose telephone number is (571)270-3532. The examiner can normally be reached on M - F, 8:00 a.m. - 4 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Hartley can be reached on (571) 272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jake M. Vu/

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Primary Examiner, Art Unit 1618

NMW